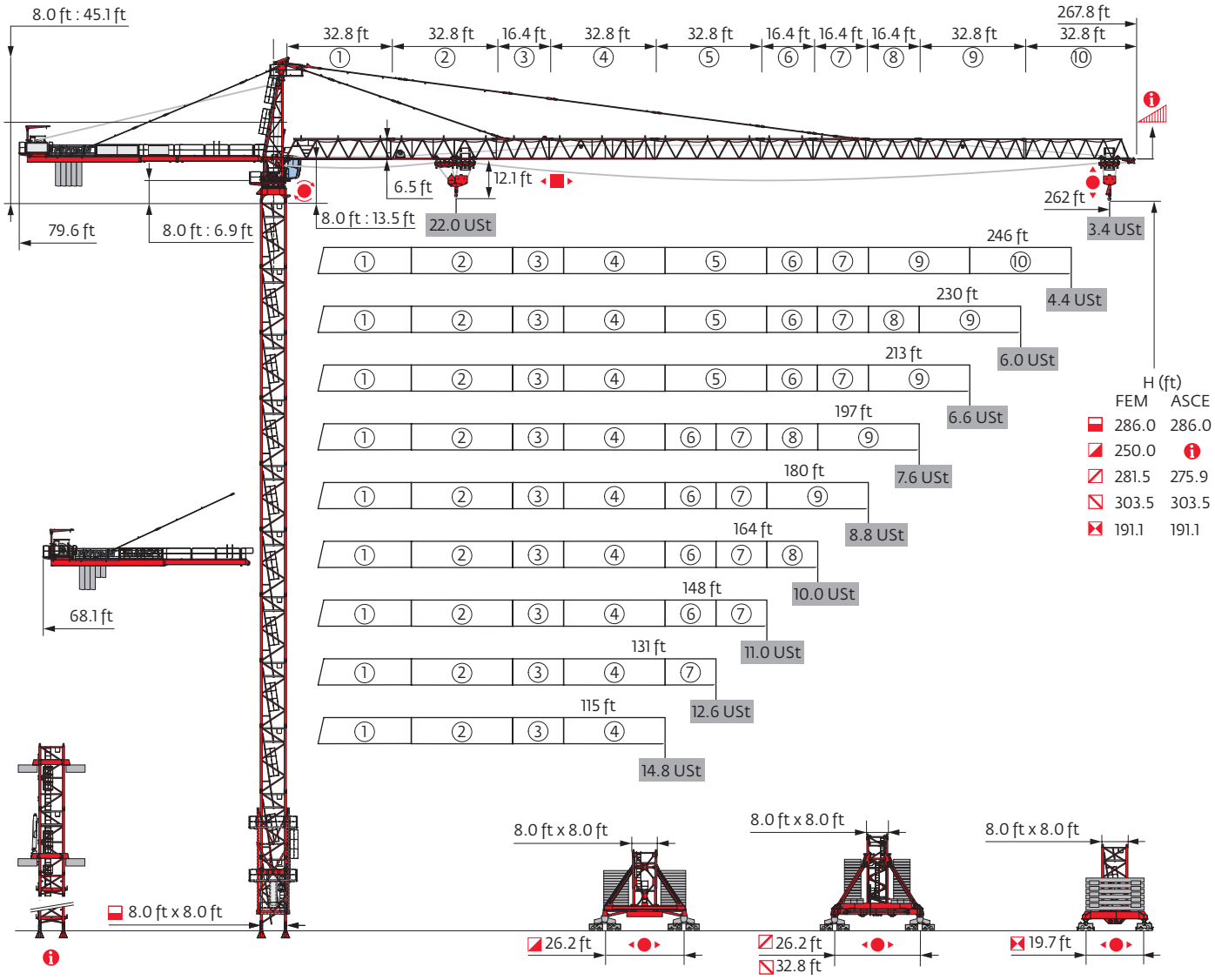
Grove Manitowoc National Crane Potain

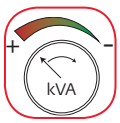
MD 485 B M20

Data Sheet

FEM 1.001-A3
ASCE 7-10

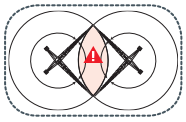


Power Control



CraneSTAR Fleet

Top Tracing II

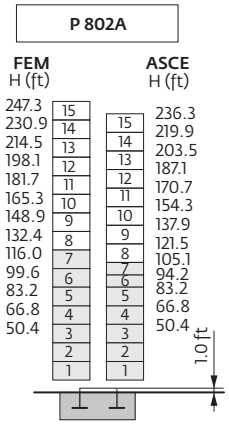


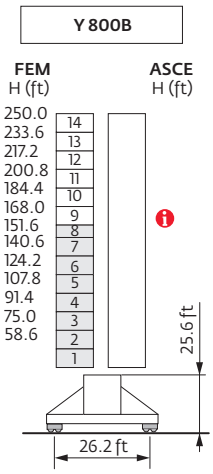
Values have been rounded

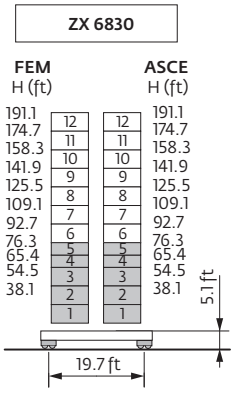
Mast

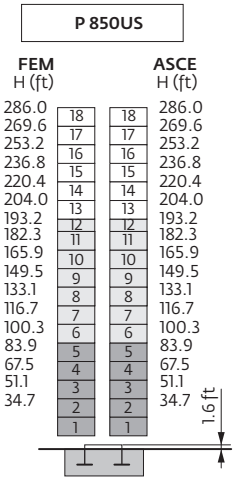
8.0 ft

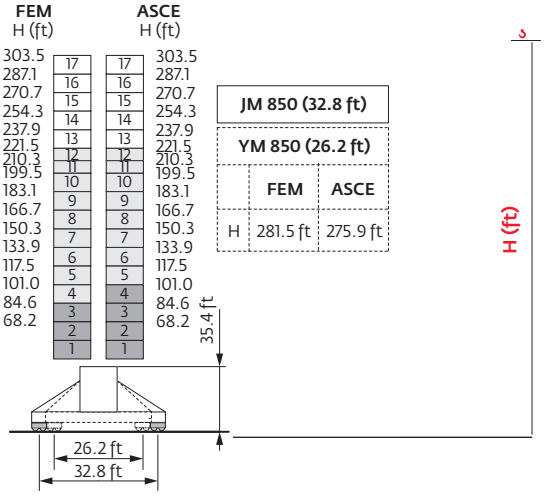
115 ft → 262 ft





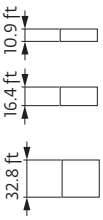






JM 850 (32.8 ft)		
YM 850 (26.2 ft)		
	FEM	ASCE
H	281.5 ft	275.9 ft

Y 800B	H1 = H	H2 = H - 2.6 ft	H3 = H - 3.9 ft
YM 850 JM 850	H1 = H	-	H3 = H - 4.6 ft
ZX 6830	H1 = H	-	H3 = H - 1.0 ft



= Non-reinforced mast

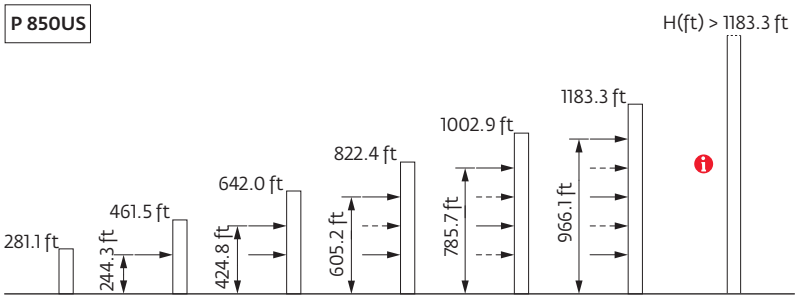
= Reinforced mast

= K850 mast

Note: When "ASCE" is noted in this data sheet it is referring to 115 mph Wind Zone, Exposure B, Design Wind Speed =98 mph. See back cover for design wind speed calculations.

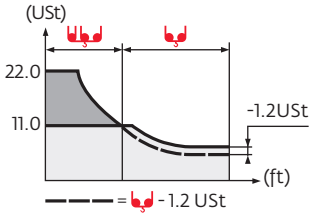
Anchorages (Consult us for ASCE 7-10 values)

P 850US

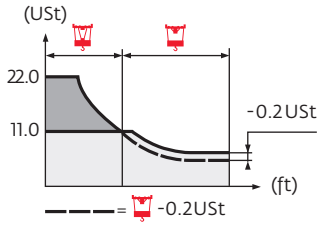


Load charts

262 ft	12	▶	57	66	72	82	89	98	99	108	115	121	131	148	164	180	197	213	230	246	262	ft
			22.0	18.5	16.4	14	12.7	11.1	11.0	11.0	10.3	9.6	8.7	7.5	6.6	5.8	5.2	4.6	4.2	3.7	3.4	USt
246 ft	12	▶	62	66	72	82	89	98	105	109	119	121	131	148	164	180	197	213	230	246	ft	
			22.0	20.6	18.4	15.8	14.3	12.6	11.6	11.0	11.0	10.8	9.8	8.5	7.5	6.6	6.0	5.4	4.9	4.4	USt	
230 ft	12	▶		72	72	82	89	98	105	115	121	127	139	148	164	180	197	213	230	ft		
				22.0	21.9	18.8	17.2	15.2	14	12.6	11.7	11.0	11.0	10.3	9.0	8.2	7.3	6.6	6.0	USt		
213 ft	12	▶			72	82	89	98	105	115	121	127	139	148	164	180	197	213	ft			
					22.0	19.0	17.3	15.2	14.1	12.6	11.7	11.0	11.0	10.4	9.1	8.2	7.3	6.6	USt			
197 ft	12	▶			74	82	89	98	105	115	121	132	144	148	164	180	197	ft				
					22.0	19.6	18.0	15.9	14.7	13.1	12.2	11.0	11.0	10.7	9.5	8.5	7.6	USt				
180 ft	12	▶			77	82	89	98	105	115	121	131	136	149	164	180	ft					
					22.0	20.5	18.7	16.5	15.2	13.7	12.8	11.6	11.0	11.0	9.9	8.8	USt					
164 ft	12	▶			78	82	89	98	105	115	121	131	138	151	164	ft						
					22.0	20.8	19.0	16.8	15.5	13.9	13.0	11.8	11.0	11.0	10.0	USt						
148 ft	12	▶			79	82	89	98	105	115	121	131	138	148	ft							
					22.0	21.1	19.2	17.0	15.7	14.1	13.1	11.9	11.2	10.3	USt							
														11.0	USt							
131 ft	12	▶			79	82	89	98	105	115	121	131	ft									
					22.0	21.2	19.4	17.1	15.8	14.2	13.2	12.0	USt									
115 ft	12	▶			80	82	89	98	105	115	ft											
					22.0	21.3	19.5	17.2	15.9	14.2	USt											



262 ft	8.2	▶	58	66	72	82	89	98	103	105	115	121	131	148	164	180	197	213	230	246	262	ft
			22.0	19.1	17.1	14.7	13.3	11.7	11.0	11.0	9.9	9.3	8.4	7.2	6.2	5.4	4.7	4.3	3.7	3.4	3.0	USt
246 ft	8.2	▶		64	72	82	89	98	105	114	116	121	131	148	164	180	197	213	230	246	ft	
				22.0	19.0	16.3	15.0	13.1	13.7	11.0	11.0	10.4	9.5	8.2	7.2	6.3	5.5	5.0	4.4	4.1	USt	
230 ft	8.2	▶			73	82	89	98	105	115	121	133	135	148	164	180	197	213	230	ft		
					22.0	19.5	17.9	15.8	14.7	13.1	12.3	11.0	11.0	9.9	8.7	7.7	6.9	6.2	5.6	USt		
213 ft	8.2	▶			74	82	89	98	105	115	121	133	135	148	164	180	197	213	ft			
					22.0	19.5	17.9	15.8	14.7	13.1	12.3	11.0	11.0	9.9	8.7	7.7	6.9	6.3	USt			
197 ft	8.2	▶			76	82	89	98	105	115	121	131	137	140	164	180	197	ft				
					22.0	20.3	18.5	16.4	15.2	13.7	12.8	11.7	11.0	11.0	9.0	8.0	7.3	USt				
180 ft	8.2	▶			79	82	89	98	105	115	121	131	142	145	164	180	ft					
					22.0	21.1	19.3	17.1	15.9	14.3	13.3	12.1	11.0	11.0	9.5	8.5	USt					
164 ft	8.2	▶			80	82	89	98	105	115	121	131	144	147	164	ft						
					22.0	21.4	19.6	17.4	16.1	14.6	13.6	12.3	11.0	11.0	9.7	USt						
148 ft	8.2	▶			81	82	89	98	105	115	121	131	145	148	ft							
					22.0	21.6	19.8	17.5	16.3	14.7	13.8	12.5	11.0	11.0	USt							
131 ft	8.2	▶			81	82	89	98	105	115	121	131	ft									
					22.0	21.8	20.0	17.6	16.4	14.8	13.8	12.6	USt									
115 ft	8.2	▶			82	82	89	98	105	115	ft											
					22.0	21.9	20.1	17.7	16.4	14.8	USt											



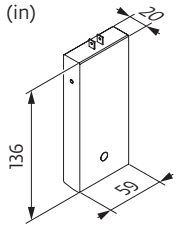
Base ballast

8.0 ft	Y 800B	H (ft)	250.0	233.6	217.2	200.8	184.4	168.0	157.1	140.6	124.2	107.8	91.4	75.0	58.6			
	FEM	(USt)	145.5	119.0	79.4	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1	66.1			
	ASCE	(USt)																
	YM 850	H (ft)	281.5	275.9	265.1	259.5	248.7	243.1	232.3	226.7	215.9	210.3	199.5	193.9	183.1	177.5	166.7	
	FEM	(USt)	224.9	-	185.2	-	145.5	-	119.0	-	79.4	-	66.1	-	52.9	-	52.9	
	ASCE	(USt)	-	211.6														
	JM 850	H (ft)	303.5	287.1	270.7	254.3	237.9	221.5	210.3	199.5	183.1	166.7	150.3	133.9	117.5	101.0	84.6	68.2
	FEM	(USt)	198.4	158.7	119.0	92.6	66.1	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9	52.9
	ASCE	(USt)	198.4															
	ZX 6830	H (ft)	191.1	174.7	158.3	141.9	125.5	109.1	92.7	76.3	65.4	54.5	38.1					
	FEM	(USt)	155.4	155.4	155.4	155.4	155.4	155.4	155.4	155.4	155.4	155.4	155.4					
	ASCE	(USt)	155.4															

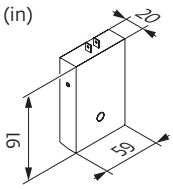
Counter-jib ballast

	(lb) (+/- 5%)			100 LVF - 150 LCC			150 LVF GH		
				13,228 lb	8818 lb	(lb)	13,228 lb	8818 lb	(lb)
262 ft	41,877	40,929	42,825	5	0	66,139	3	2	57,320
246 ft	40,113	39,165	41,061	4	1	61,729	3	1	48,502
230 ft	39,661	38,713	40,609	4	1	61,729	3	1	48,502
213 ft	38,118	37,170	39,066	3	2	57,320	2	2	44,092
197 ft	35,836	34,888	36,784	3	1	48,502	2	1	35,274
180 ft	34,293	33,345	35,241	2	2	44,092	1	2	30,865
164 ft	33,235	32,287	34,183	3	2	57,320	2	2	44,092
148 ft	31,802	30,854	32,750	3	1	48,502	2	1	35,274
131 ft	29,895	28,947	30,843	2	2	44,092	1	2	30,865
115 ft	24,659	23,711	25,607	2	1	35,274	1	1	22,046

CBC - 13,228 lb



CBD - 8818 lb



Component weights

Crane upper : 262 ft - - 100 LVF

x 13

x 9

		L (ft)	W (ft)	H (ft)	lb (+/- 5%)
Counter-jib		35.4	10.2	5.6	8300
		12.1	6.2	5.6	2172
		26.9	6.2	5.6	4575
Towerhead		13.8	7.3	38.7	16,546
Cab	UltraView	16.5	7.3	8.2	3704
Pivot	8.0 ft	12.5	14.0	9.7	20,349
Hoisting winch (+ rope)	100 LVF	10.4	5.2	6.2	9822
	180 LVF GH	14.0	6.6	7.7	20,349
	150 LCC	12.3	5.4	6.2	12,357
Jib section	①	33.5	6.6	7.8	7081
	② 10 DVF	34.0	6.2	7.4	8278
	④	33.9	6.2	7.3	4641
	⑤	34.3	6.2	7.3	4023
	⑨	33.3	6.2	6.5	2800
	⑩	33.2	6.2	6.4	1973
Jib section	③	17.6	6.2	7.4	3186
	⑥	17.6	6.2	7.3	2238
	⑦	17.5	6.2	7.4	2535
	⑧	17.1	6.2	6.6	1676
Trolley	22.0 USt	5.9	7.3	5.3	1455
Hook block	22.0 USt	3.9	1.4	7.4	1940
Trolley	22.0 USt	13.5	7.2	3.8	2635
Trolley	11.0 USt	7.0	7.2	3.8	1422
Hook block	22.0 USt	6.0	1.1	7.3	1951
	11.0 USt	3.8	0.7	5.8	981

Component weights

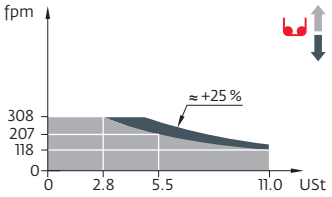
		L (ft)	W (ft)	H (ft)	lb (+/- 5%)
Climbing cage	⊿8.0 ft	15.2	19.0	33.6	28,484
K 850/KR 849B KRMT 849A K 849A K 850/KR 849A KMT 850.10A KRMT 849C	⊿8.0 ft	33.6 17.2 17.2 17.2 17.5 11.7	8.3 8.4 8.3 8.3 8.3 8.4	8.2 8.3 8.2 8.2 8.2 8.3	20,878 9017 7496 12,291 12,015 7066
Fixing angles	P 802A	2.5	2.5	4.2	1050
Fixing angles	P 850US	2.3	2.3	5.5	2127
Chassis mast	Y 800B	19.8	9.6	9.6	19,004
Struts	Y 800B	18.1	1.6	1.5	2447
1/2 Side member	Y 800B	18.6	4.1	2.4	3351
Side member	Y 800B	39.4	4.1	2.4	6724
Ballast support	Y 800B	12.3	1.2	3.0	2392
Chassis beam	Y 800B	28.5	2.7	2.4	4938
Central cross (transport position)	YM 850 JM 850	17.1	5.6	4.9	14,771
Chassis mast	YM 850 JM 850	28.7	8.2	8.2	32,187
Chassis girder	YM 850 JM 850	12.5 17.1	3.0 3.0	5.1 5.1	6173 7055
Chassis ties	YM 850 JM 850	23.6	0.8	1.1	551
Struts	YM 850 JM 850	24.6 26.9	2.5 2.5	4.3 4.3	4630 5071
Cross girder	ZX 6830	29.9 29.9	3.7 2.5	3.6 4.9	11,607 12,004

Mechanisms

480 V - 60 Hz													hp	kW	
	100 LVF 50 Optima	fpm	118	151	207	308	59	75	105	154			100	75	3340 ft
		USt	11.0	8.3	5.5	2.8	22.0	16.5	11.0	5.5					
	180 LVF 50 GH Optima	fpm	210	266	361	561	804	112	144	210	344	400	180	132	3937 ft
		USt	11.0	8.3	5.5	2.8	0.9	22.0	16.5	11.0	5.5	3.5			
	150 LCC 50	fpm	190	223	282	374	453	95	112	141	187	226	150	110	2579 ft
		USt	11.0	8.3	5.5	2.8	1.4	22.0	16.5	11.0	5.5	2.8			
	10 DVF 10	fpm	0 → 262 (22.0 USt) 0 → 328 (13.2 USt) 0 → 361 (6.6 USt)										10	7.4	
	RVF 183 Optima+	rpm	0 → 0.8										3 x 12	3 x 9	
Y 800B	RT 584 A1 - 2V	fpm	28 - 56										8 x 8.4	8 x 6.2	
YM 850 JM 850															
ZX 6830	RT 664 A2B - 2V	fpm	62 - 125										6 x 8.4	6 x 6.2	

IEC 60204-32	kVA
480 V (+6% -10%) 60 Hz	100 LVF : 106 kVA 150 LCC : 170 kVA 180 LVF GH : 170 → 98 kVA

100 LVF 50 Optima



Key

	Jib elevation
	Standard equipment
	Options
	Reactions in service
	Reactions out of service
	Weight without load, without ballast, with jib and max. height
	Total ballast weight
	Truck 44 ft
	Container High Cube 40 ft, and/or Flat Rack 20 ft

	Tightened anchorage frame
	Loosened anchorage frame
	Hoisting
	Trolleying
	Slewing
	Travelling
kVA	Required power
	Power Control function: Hoisting speeds adapted to the available power
	Consult us

Note: These mast combinations meet the EN 14439 and ASME B30.3-2012 specifications for "out of service" wind conditions, provided the illustrated wind speed matches required design wind for the location of the tower crane. The "out of service" design wind speed was determined in accordance with ASCE 7-10, Figure 26.5-A. The wind velocity, used for this configuration was 98 mph (158 kph), which represents a nominal design 3-second wind gust at 33 ft (10 m) above ground for Exposure B category A. Factor of 0.85 was applied to the 50-year ultimate design wind speed of 115 mph (185 kph), per ASCE 37-02, with the assumption that this crane is considered a temporary structure used during a construction period of 2 years or less.

Constant improvement and engineering progress make it necessary that we reserve the right to make specification, equipment and price changes without notice. Illustrations shown may include optional equipment and accessories, and may not include all standard equipment.

Manitowoc

www.manitowoccranes.com

Manitowoc Cranes

Regional Headquarters

Americas
Manitowoc, Wisconsin, USA
Tel: +1 920 684 6621
Fax: +1 920 683 6277

Shady Grove, Pennsylvania, USA
Tel: +1 717 597 8121
Fax: +1 717 597 4062

Europe, Middle East, Africa
Dardilly, France
Tel: +33 472 18 2020
Fax: +33 472 18 2000

China
Shanghai, China
Tel: +86 21 6457 0066
Fax: +86 21 6457 4955

Greater Asia-Pacific
Singapore
Tel: +65 6264 1188
Fax: +65 6862 4040

Potain MD 485 B M20
Code 04-026-.25M-0714

© Manitowoc 2014